IN THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method of detecting and preventing ventricular arrhythmias, comprising:

a. determining an electrogram or electrocardiogram signal;

[[a.]] b. detecting at least two premature ventricular contractions (PVCs);

[[b.]] c. determining a difference between morphologies of the at least two PVCs;

[[c.]] d. comparing said difference to a predetermined morphology threshold using a microprocessor; and

~~d. determining whether to deliver~~ e. delivering preventive therapy based on said comparing step.

2. (Currently Amended) The method of claim 1, ~~further comprising the step of: e.~~ wherein step (e) comprises determining whether to deliver preventative therapy based on step (d) and delivering therapy when ~~step (d) indicates~~ it is determined that therapy should be delivered.

3. (Currently Amended) The method of claim [[2]] 1, wherein step (e) comprises:

delivering overdrive pacing.

4. (Currently Amended) The method of claim 1, wherein step [[(d)]] (e) comprises:

determining that preventive therapy should be delivered when the difference is greater than the morphology threshold; and

determining that preventive therapy should not be delivered when the difference is less than the morphology threshold.

5. (Original) The method of claim 2, further comprising a step after step (e) of:

narrowing said morphology threshold when a ventricular arrhythmia is detected after determining that preventative therapy should not be delivered.

6. (Currently Amended) The method of claim 1, further comprising before step [[(c)]] (d):

determining a difference between coupling intervals of the at least two PVCs; and

comparing the difference between the coupling intervals to a predetermined coupling interval threshold.

7. (Currently Amended) The method of claim 6, wherein step [[(d)]] e further comprises:

determining that preventive therapy should not be delivered when the difference between the coupling intervals is less than the predetermined coupling interval threshold.

8. (Currently Amended) The method of claim 7, further comprising after step [[(d)]] e:

reducing said coupling interval threshold when a ventricular arrhythmia is detected after determining that preventative therapy should not be delivered.

9. (Original) The method of claim 8, wherein said coupling intervals are P-R coupling intervals.

10. (Original) The method of claim 8, wherein said coupling intervals are R-R coupling intervals.

11. (Currently Amended) The method of claim 1, wherein step [[(b)]] (c) comprises

i. aligning a QRS complex from each of the at least two PVCs;

ii. measuring a difference in areas under QRS waveforms in the QRS complexes; and

iii. assigning a match score that is proportional to the difference in step (ii).

12. (Original) The method of claim 11, wherein said predetermined morphology threshold is an average match score of at least two non-PVC beats.

13. (Original) An apparatus configured to detect and prevent ventricular arrhythmias, comprising:

detecting means configured to detect at least two premature ventricular contractions (PVCs);

processing means configured to determine a difference between morphologies of each of the at least two PVCs;

comparing means configured to compare said difference to a predetermined morphology threshold; and

delivering means configured to deliver preventative therapy based on said comparison.

14. (Original) The apparatus of claim 13, wherein said delivering means is configured to deliver preventative therapy if the difference between the morphologies is greater than the predetermined morphology threshold.

15. (Original) The apparatus of claim 13, wherein said processor means is further configured to narrow the predetermined morphology threshold when a ventricular arrhythmia is detected after the difference between the morphologies is determined to be less than the predetermined morphology threshold.

16. (Original) The apparatus of claim 13, wherein:

said processing means is further configured to determine a difference between coupling intervals of each of the at least two PVCs; and

said comparing means is further configured to compare said difference between the coupling intervals to a predetermined coupling interval threshold.

17. (Original) An implantable cardiac device, comprising:

a sensing circuit configured to sense at least two premature ventricular contractions (PVCs);

a comparing circuit configured to compare a difference between morphologies of each of the at least two PVCs to a predetermined morphology threshold; and

a pacing circuit configured to deliver preventative therapy based on said comparison.

18. (Original) The device of claim 17, wherein said pacing circuit is configured to deliver the preventative therapy when the difference between the morphologies is greater than the predetermined morphology threshold.

19. (Original) The device of claim 17, further comprising a control system configured to reduce the predetermined morphology threshold when a ventricular arrhythmia is detected after the difference between the morphologies is determined to be less than the predetermined morphology threshold.

20. (Original) The device of claim 17, wherein said comparing circuit is further configured to compare a difference between coupling intervals of each of the at least two PVCs to a predetermined coupling interval threshold.

21. (Original) The device of claim 20, wherein said pacing circuit is configured

to deliver preventative therapy when the difference between the coupling intervals is greater than the predetermined coupling interval threshold.

22. (Original) The device of claim 20, further comprising a control system configured to reduce the predetermined coupling interval threshold when a ventricular arrhythmia is detected after the difference between the coupling intervals is determined to be less than the predetermined coupling interval threshold.

23. (Currently Amended) A method of detecting and preventing ventricular arrhythmias, comprising:

a. determining an electrogram or electrocardiogram signal;

[[a.]] b. detecting at least two premature ventricular contractions (PVCs);

[[b.]] c. determining a difference between coupling intervals of the at least two PVCs;

[[c.]] d. comparing said difference between coupling intervals to a predetermined coupling interval threshold using a microprocessor;

[[d.]] e. determining a difference between morphologies of the at least two PVCs;

[[e.]] f. comparing said difference between morphologies to a predetermined morphology threshold using the microprocessor; and

[[f.]] g. delivering ~~determining whether to deliver~~ preventative therapy based on said comparing steps [[(c)]] (d) and [[(d)]] (f).

24. (Currently Amended) The method of claim 23, ~~further comprising the step of: g.~~ wherein step (g) comprises determining whether to deliver preventative therapy based on said comparing steps d and f and delivering therapy when ~~step (f) indicates~~ it is determined that therapy should be delivered.

25. (Currently Amended) The method of claim [[24]] 23, wherein step (g) comprises:

delivering overdrive pacing.

26. (Currently Amended) The method of claim 23, wherein step [[(f)]] g comprises:

determining that preventative therapy should be delivered when the difference between coupling intervals is greater than the coupling interval threshold and the difference between morphologies is greater than the morphology threshold; and

determining that preventative therapy should not be delivered when the difference between coupling intervals is less than the coupling interval threshold or the difference between morphologies is less than the morphology threshold.

27. (Currently Amended) A method of detecting and preventing ventricular arrhythmias, comprising:

a. determining an electrogram or electrocardiogram signal;

[[a.]] b. detecting at least two premature ventricular contractions (PVCs);

[[b]]. c. comparing said difference between coupling intervals of said at least two PVCs to a coupling interval threshold using a microprocessor;

[[c.]] d. repeating steps (a) – (c) when said difference between coupling intervals is less than the coupling interval threshold; [[and]]

[[d.]] e. comparing a difference in morphologies of said at least two PVCs to a morphology threshold when said difference between coupling intervals is greater than the coupling interval threshold using the microprocessor; and

[[e.]] f. delivering therapy when said difference in morphologies is greater than the morphology threshold.

28. (Canceled).